

Amendments to the Drawings:

Please substitute the attached 12 sheets (Figs. 1, 2, 3A, 3B, 3C, 3D, 3E, 4, 5, 6, 7A, 7B and 8) of formal drawings for the informal drawings originally filed with the application.

REMARKS

Applicant respectfully requests reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow.

In the specification, a paragraph has been amended on page 38.

Claims 1-45 remain pending in this application.

The Office Action objects to the specification, indicating that the incorporation of subject matter is ineffective for not including the application serial number. Applicant respectfully notes that, at the time of filing of the present application, the serial number of the application incorporated by reference was not available. Applicant has amended the specification to include the serial number of the application incorporated by reference. Accordingly, the objection should now be withdrawn.

Claims 1-45 were rejected under 35 U.S.C. § 101 as allegedly being directed to non-statutory subject matter. Specifically, the Examiner argues that the “claim language is directed towards a system, however the claimed system is a series of software modules and ... the claimed subject matter fails to disclose or suggest a useful, concrete and tangible result as required.” Office Action dated November 27, 2006, page 2 (emphasis in original). Applicant respectfully traverses this rejection for at least the following reasons.

First, Applicant notes that not all of the pending claims are directed to a system. For example, claims 1-12 are directed to a method, and claims 35-45 are directed to a program product. As to claims 35-45, Applicant notes that “[w]hen functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized.” M.P.E.P. § 2106(IV)(B)(1).

Second, Applicant notes that each claim does indeed recite a “useful, concrete and tangible result.” Specifically, each claim recites the outputting of a result by, for example,

“providing said model” to other components of a system. “[T]he transformation of data ... by a machine through a series of mathematical calculations ... constitutes a practical application of a mathematical algorithm, formula, or calculation, because it produces ‘a useful, concrete and tangible result’” M.P.E.P. § 2106(IV)(B)(2)(a), quoting State Street Bank & Trust Co. v. Signature Financial Group, Inc., 149 F.3d 1368, 1373 (Fed.Cir. 1998). In the present case, the “useful, concrete and tangible result” is providing the probabilistically equivalent model of the outputs. Therefore, claims 1-45 are indeed directed to statutory subject matter, and the rejection should be withdrawn.

Claims 1, 4, 13, 16, 24, 17, 35 and 38 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. Patent No. 6,549,854 to Malinverno et al. (hereinafter “Malinverno”) in view of Kilgore. Claims 2, 3, 14, 15, 25, 26, 36 and 37 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Malinverno in view of Kilgore and further in view of U.S. Patent No. 6,173,240 to Sepulveda et al. (hereinafter “Sepulveda”). Claims 6, 7, 17, 18, 28, 29, 39 and 40 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Malinverno in view of Kilgore. Claims 8-12, 19-23, 30-34 and 41-45 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Malinverno and Kilgore and further in view of Sepulveda. Applicant respectfully traverses this rejection for at least the following reasons.

Embodiments of the present invention relate to methods and systems for integrated uncertainty analysis. As described in the background section of the present application, conventional uncertainty analyses are performed using a Monte Carlo analysis, which can require a large number of simulations to be executed with inputs being varied according to a corresponding underlying probability density function. Thus, a complete underlying analysis can be very time-consuming and can require a great amount of resources. Embodiments of the present invention resolve these issues through the use of a probabilistically equivalent model. As described in detail in the specification, the use of a probabilistically equivalent model can significantly increase the efficiency of an uncertainty analysis for a particular module, as well as

for a system of multiple modules. Accordingly, independent claim 1 recites “generating a probabilistically equivalent model of said module.” Independent claims 6, 13, 17, 24, 28, 35 and 39 recite similar features.

None of the references cited by the Examiner teach or suggest a probabilistically equivalent model for conducting an uncertainty analysis. Instead, the Office Action argues that the disclosure of using a Monte Carlo method in Malinverno is “functionally equivalent to generating a probabilistically equivalent model.” Office Action dated November 27, 2006, page 4. Applicant respectfully notes that no one skilled in the art would consider a Monte Carlo analysis to be functionally equivalent to the use of a probabilistically equivalent model. For example, in performing an uncertainty analysis of a system with multiple inputs and multiple outputs, unlike a Monte Carlo analysis, using a probabilistically equivalent model can provide the contribution of each uncertain input to the variation in each output. Accordingly, a Monte Carlo analysis is not functionally equivalent to using a probabilistically equivalent model.

None of the other reference cited by the Examiner teach or suggest anything related to uncertainty analyses using probabilistically equivalent models. Accordingly, independent claims 1, 6, 13, 17, 24, 28, 35 and 39 are patentable. Claims 2-5 depend from allowable claim 1 and are, therefore, patentable for at least that reason, as well as for additional patentable features when those claims are considered as a whole. Similarly, claims 7-12 depend from allowable claim 6, claims 14-16 depend from allowable claim 13, claims 18-23 depend from allowable claim 17, claims 25-27 depend from allowable claim 24, claims 29-34 depend from allowable claim 28, claims 36-38 depend from allowable claim 35, and claims 40-45 depend from allowable claim 39. Therefore, claims 7-12, 14-16, 18-23, 25-27, 29-34, 36-38 and 40-45 are patentable for at least that reason, as well as for additional patentable features when those claims are considered as a whole.

Applicant believes that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.


The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 50-0872. Should no proper payment be enclosed herewith, as by a check or credit card payment form being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 50-0872. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 50-0872.

Respectfully submitted,

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